maxillae and the premaxillae above, is a *sine qua non* for mammalian comparison. In the more basal Theromorpha the teeth are not so limited in position. Finally, to complete the remarkable mammalian resemblance of the teeth of these reptiles, it must be mentioned that in *Tritylodon* and *Diademodon* the ropts of the molars, as we may fairly term them, though not actually divided after the mammalian fashion, were deeply marked by a groove, which suggests an incipient division or a fusion of two distinct roots. Some of these facts of structure may now be considered in further detail As to the incisors and canines, it is sufficient to say that the numbers of the former, and the shape of the latter, are in perfect consonance with a derivation, of the Mammalia from this group. The molar series can be divided into premolars and molars, at least in so far as regards their shape ; for the anterior teeth are often smaller and less complicated than those which follow, as is often the case with the two series in mammals. The molar series also consist of teeth in close apposition to each other and separated from the canines by a diastema, which is a character of mammalian teeth. The fact that in the reptile *Cynognatlius* and the mammal *Jl£yr« mecobius* there are nine of these molar teeth in each half of each jaw is perhaps not a point upon which it is desirable to dwell with too much weight ; but the general fact that the molars are further reduced in some genera of Theriodontia than in that which has been mentioned, is clearly a matter of significance when the ancestry of the mammals is under consideration.

The most interesting fact about the molar series in the Theriodontia is that we meet with the two types of molars that occur in the mammals. *Cynogncttfaus* and other genera have molars which consist of a main cusp, and of one cusp before and one after the main cusp ; in fact these teeth are triconodont as in certain early mammals, a state of affairs which is believed by the " trituberculists " (see p. 56) to have preceded the tritubercular tooth. There are also " imiltitubercular " teeth, especially well developed in *Tritylodon,* where

they exactly resemble those of certain Multituberculata, and whose structure originally led to the placing of *Tritylodon* among the mammals of that group. If there is any question about the mammalian nature **of** this fossil, there remain several other Theriodontia in which the multituberculism is well marked. It is so in *Trirhacfoodon.*